EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER

11163342

PUBLICATION DATE

18-06-99

APPLICATION DATE

27-11-97

APPLICATION NUMBER

09340830

APPLICANT: NEC CORP:

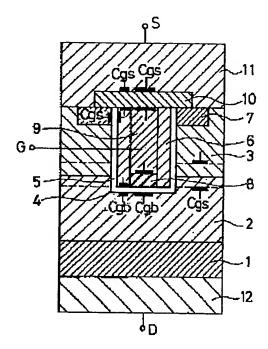
INVENTOR: ANDO TAKAYOSHI;

INT.CL.

: H01L 29/78 H01L 29/43

TITLE

: SEMICONDUCTOR DEVICE



ABSTRACT: PROBLEM TO BE SOLVED: To actualize the semiconductor device which is reduced in gate electrode resistance and on-resistance, as to a longitudinal field effect transistor having a trench groove.

> SOLUTION: This semiconductor device which has a first diffusion layer 3 of second conductivity type and a second diffusion layer 7 of a first conductivity type formed doubled on the surface part of a first conductivity type semiconductor substrate 1 or first conductivity type epitaxial layer 2, has a trench groove 4 where a gate oxide film 5 and a gate electrode 6 are embedded on the surface and also has a channel arranged longitudinally along the depth of the trench groove 4 is constituted by etching part of the gate electrode 6 along the depth of the trench groove 4 and thus forming a hollow part, and then embedding an oxide film layer 8 thicker than the gate oxide film 5 at the bottom part of the hollow part and further metal with conductivity larger than that of the gate electrode on it.

COPYRIGHT: (C)1999,JPO